



UNITED STATES DEPARTMENT OF COMMERCE
Bureau of the Census
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MEMORANDUM FOR Distribution

From: Cynthia Clark
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Subject: Evaluation of the Mail Return Questionnaire

I am pleased to present the executive summary for the evaluation study for the Census 2000 Dress Rehearsal. The dress rehearsal was conducted in three sites — Columbia, South Carolina; Menominee County, Wisconsin; and Sacramento, California. The evaluation studies cover detailed aspects of eight broad areas related to the census dress rehearsal — census questionnaire, address list, coverage measurement, coverage improvement, promotion activities, procedures for nonrespondents to mail census, field operations, and technology.

The executive summary for each evaluation study is also available on the Census Bureau Internet site (<http://www.census.gov/census2000> and click on the link to “Evaluation”). Copies of the complete report may be obtained by contacting Carnelle Sligh at (301) 457-3525 or by e-mail at carnelle.e.sligh@census.gov.

The evaluations are distributed broadly to promote the open and thorough review of census processes and procedures. The primary purpose of the dress rehearsal is to simulate portions of the environment we anticipate for Census 2000, so we can identify and correct potential problems in the processes. Thus, the purpose of the evaluation studies is to provide analysis to support time critical review and possible refinements of Census 2000 operations and procedures.

The analysis and recommendations in the evaluation study reports are those of staff working on specific evaluations and, thus, do not represent the official position of the Census Bureau. They represent the results of an evaluation of a component of the census plan. They will be used to analyze and improve processes and procedures for Census 2000. The individual evaluation recommendations have not all yet been reviewed for incorporation in the official plan for Census 2000. These evaluation study reports will be used as input to the decision making process to refine the plans for Census 2000.

The Census Bureau will issue a report that synthesizes the recommendations from all the evaluation studies and provides the Census Bureau review of the dress rehearsal operation. This report will also indicate the Census Bureau’s official position on the

utilization of these results in the Census 2000 operation. This report will be available July 30th.

Evaluation of the Nonresponse Followup Operation (A1b)

Evaluation of the Mail Return Questionnaire (A2)

Evaluation of Telephone Questionnaire Assistance (A4)

Service Based Enumeration Coverage Yield Evaluation (D1)

Effectiveness of Paid Advertising (E1a)

Promotion Evaluation: Exposure to Paid Advertising and Likelihood of Returning a Census Form (E1b)

Field Infrastructure: EEO Process (G7)

Evaluation of the Housing Unit Coverage on the Master Address File (B1)

Evaluation of the Mail Return Questionnaires

April 1999

Wendy L. Davis
Planning, Research, and
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For questions regarding this summary or to request a copy of the full report, contact the Planning, Research, and Evaluation Division, Bureau of the Census (301) 457-3525.

EXECUTIVE SUMMARY

Background

The objective of this evaluation is to assess the quality of the data on mail return census forms. This information is needed because responding by mail is the preferred method of participation in the Decennial Census of Population in the year 2000. Mail is the least expensive way to collect information about a household. In 1990, the mail response rate was 66 percent (Fay et al., 1991).

The expected response rate for Census 2000 is about 61 percent. Given that the majority of the US population is expected to be enumerated by mail, one objective of the 1998 Dress Rehearsal will be to evaluate the quality of the data reported on the mail form returns to see if any changes to the design of the forms or questions on the forms is needed.

Methodology

This evaluation answers three specific questions all having to do with the quality of the mail return data:

- 1) **Does the structure of the short form negatively affect the way people navigate through the form?** Specifically, we want to know whether people are beginning in the first person space, and whether they are using the form like a booklet rather than completely unfolding it.

This will be assessed by examining the person spaces completed by respondents. To assess whether respondents have difficulty determining where to start the forms, we will look at the percentage of households for which the first completed space was the first person space.

To assess whether respondents are using the form like a booklet and missing person spaces four and five, we will look to see if person spaces four or five are complete in households with four or more people.

- 2) **Do respondents complete the coverage related questions?**

To answer this question, we will calculate item missing data rates for each of the coverage related questions: the pop count question on the short form, the roster on the long form, and; the continuation roster on the short form.

- 3) **Do the changes made to content items since 1990 affect data quality?**

This portion of the analysis covers three 100 percent items that were changed since 1990, as well as the two long form items. The three 100 percent items are relationship, race and Hispanic Origin. The two long form items are the grandparents as care givers question series and the disability question series.

Data quality is measured by item missing data rates and analysis of response distributions.

In addition, this portion of the analysis examines two format differences between the short and long form: the format of response categories, and; the placement of a question specific instruction. This will be assessed by comparing response distributions between the short and long forms.

Results & Recommendations

1. Does the structure of the form negatively affect the way people navigate through the form?

Based on a preliminary review of a non-representative set of mail returns as well as results from laboratory pretesting, we thought mail respondents might have some difficulty figuring out where to start and how to navigate through the short form. This was not the case. Less than one percent of all respondents started completing the person spaces some place other than person one. Similarly, only between three and five percent of households with four or more people missed one of the person spaces on the form and had to continue listing people on the continuation roster.

Thus, our concerns about whether people would be able to use the short form and all of its folds were unfounded. Regardless, a decision has already been made to collect data for six people rather than five in Census 2000. The move to a six person form meant changing the structure of the form, so the Dress Rehearsal design is no longer an issue.

2. Do respondents complete the coverage related questions?

It is believed that by completing the coverage related questions respondents will be less likely to mistakenly omit a household member as they complete the person spaces. In addition, the coverage related questions provide a consistency check with the completed person spaces. If there is an inconsistency between the response to the coverage related questions and the number of completed person spaces, the household can be contacted again to resolve the discrepancy.

Compared to the 1990 Census, the Alternative Questionnaire Experiment in the 1990 Census, and the 1996 National Census Test, very few households left the coverage related questions blank. The percent of missing data for the long form roster page was about the same as that in the 1990 Alternative Questionnaire Experiment. For the California and South Carolina sites, the percent missing was only about 3%, and in Menominee none of the long form roster pages were left blank. Given this low percent of missing data, no changes are recommended for Census 2000.

There is no comparison for the short form continuation roster, but in all three sites the percent of missing data was exceptionally low, less than 2%, again indicating no changes are warranted for Census 2000.

The percentage of missing data for the person count box on the short form in Dress Rehearsal was a little high -- around 6% for California and South Carolina and a little over 3% in

Menominee, though this was still better than the 1996 National Census Test (9.3%). However, this has already been addressed in the Census 2000 forms by making the formatting of the box more obvious.

3. Do the changes made to the content items since 1990 affect data quality?

3.1 What effect do wording changes have on data quality?

The question wording or the response categories for three of the 100 percent items changed markedly since 1990 – the relationship, race and Hispanic Origin questions.

Relationship

For the relationship item, several new response categories were added since 1990. There was no noticeable effect of these changes on the missing data, and the effect on the response distribution was what was expected, a slight decrease in the percent of “other relative” reported as compared to other current survey data. Thus no changes are recommended.

Race

The changes to the race question did have significant effects on data quality. Moving the race question to follow the Hispanic Origin question resulted in a much larger percentage of missing data as compared to 1990. Specifically, the increase seemed to be a result of Hispanic respondents leaving the race item blank. In the California site almost 36% of Hispanic respondents left the race item blank, whereas only a little more than 1% of non-Hispanics did. The results were similar in the other two sites. These results suggest that once they have answered the Hispanic Origin question, the race question seems redundant for about 1/3 of Hispanics.

Unfortunately, the design of the Census 2000 forms has already been determined, so it may not be possible to implement any further changes on the form. However, if changes are possible, we recommend modifying the current instruction before the Hispanic Origin questions to say explicitly that regardless of the answer to the Hispanic Origin question, it is important that the race question be completed as well. In addition, if possible it may be helpful to add a little extra space between the two questions making it more obvious that they are separate.

Hispanic Origin

In contrast to the race results, the percent of missing data on the Hispanic Origin question was noticeably less than it was in 1990. In the California site the percent missing was about 6% on the Dress Rehearsal short form; in 1990 for this site, about 10% of the short form responses to this item were missing. The improvements were even more marked in South Carolina and Menominee. Given these findings, we do not recommend any changes for the item. However, it is possible that adding the recommended wording before this item regarding the completion of the race item may affect this item as well. If any changes are made, pre-testing is recommended.

Grandparents as care givers

The first item in the grandparents as care giver series measures the prevalence of children under the age of 18 living with their grandparents. The estimate based on Dress Rehearsal data is quite comparable to a national estimate based on Current Population Survey data, suggesting the question is measuring what is intended to measure. However, the response categories for capturing the duration of time that grandparents have been responsible for their grandchildren did not seem appropriate in the Dress Rehearsal. Roughly two-thirds of the responses to this question were in the open-ended category of “12 months or more.” This has been noted and changed on the Census 2000 forms.

Disability

The missing data rates for the disability question series were not much different than those for the grandparents item, in any of the Dress Rehearsal sites. Thus, getting people to respond to the items in the series does not seem problematic.

However, the prevalence estimate for one item in the series, (difficulty going outside the home alone to shop or visit a doctor’s office), was quite disparate from a national estimate based on a comparative measure on the 1994-1995 Survey of Income and Program Participation or even the same item on the 1990 Census. The estimate was about 9% in both of the Dress Rehearsal sites, compared to 4% national estimate on the Survey of Income and Program Participation. In addition, the Dress Rehearsal rates are about twice as high as the 1990 Census rate for which the wording was the same. Since the only difference between the 1990 Census and Dress Rehearsal for this specific subquestion is that different questions preceded it, the change in the estimate may reflect some type of context effect. However, these data do not allow us to discern the effect of context, so this is only one possible hypothesis. Since the difference is so large, we recommend that publications using these data note the discrepancy between this and other sources, such as the Survey of Income and Program Participation.

3.2 Does the format of response categories or placement of specific instructions affect data quality?

The two formatting issues were whether the format of response categories and whether the placement of question-specific instructions can affect response to an item.

Format of Response Categories

There were two differences in the format of the response categories across the short and long forms. First, the response categories were banked more on the short form than on the long form for both the race and relationship questions. The hypothesis was that the categories in the columns furthest to the right would be missed resulting in a decreased reporting of those categories on the short form. There was no evidence that banking affected the response distributions for either item.

The second difference in the format of the response categories between the short and long forms had to do with the placement of a write-in field separating the relative and non-relative categories on the long form. The hypothesis was that the write-in field could signal a stopping point to respondents resulting in a decreased reporting of the categories below the write-in field, in this case the non-relatives. The data suggest that the write-in field on the long form may have diminished the number of people selecting the non-relative categories. The California site had 6.21% non-relatives on the short form and only 4.36% on the long form. The South Carolina site had 3.25% non-relatives on the short form and only 2.19% on the long form. The Wisconsin site had 6.33% non-relatives on the short form, and 4.74% on the long form.

Unfortunately, the design of the form does not permit any alternative placement of the write-in field. Thus, the only recommendation for Census 2000 is that analysts be made aware of this as a possibility, though it is expected that much of this can be taken care of in later editing.

Placement of Question Specific Instructions

The location of the instruction to “mark one or more races” was slightly different between the long and short forms for the race item. On the short form the whole instruction was included on the same line as the rest of the question stem. However, on the long form the instruction was split after the word ‘or.’ It was thought that respondents who skimmed the form might miss the fact that they could choose more than one race on the long form more so than they would on the short form. If that was the case we would expect to see few multiple race reports on the long form than on the short form.

As it turns out, the percent of multiple race reports was quite comparable between the short and long forms. Thus, splitting the instruction across two lines did not seem to have an affect on response. Given this and the fact that the space constraints for Census 2000 are quite limiting, no changes are warranted for Census 2000.